

What is claimed is:

1. A superconducting integrated circuit comprising:
 a substrate;
 a multilayer structure formed on said substrate and composed of a lower superconducting electrode, a tunnel barrier and an upper superconducting electrode sequentially joined together upward in the order mentioned; and
 an insulating layer perforated to form via holes to get electrical contacts with said lower electrode and said upper electrode, said insulating layer being formed of a high-resolution, photosensitive, solvent-soluble, organic insulating material.
2. The superconducting integrated circuit according to claim 1, wherein said insulating material is a photosensitive solvent-soluble polyimide.
3. The superconducting integrated circuit according to claim 1, further comprising a resistor additionally disposed on said substrate and a via hole formed in said insulating layer to get electrical contacts with said resistor.
4. A method for the production of a superconducting integrated circuit, comprising:
 depositing on a substrate a multilayer of a lower superconducting electrode, a tunnel barrier and an upper superconducting electrode sequentially deposited upward in the order mentioned;
 applying a high-resolution, photosensitive, solvent-soluble, organic insulating material to a front surface of said substrate inclusive of the multilayer;
 forming via holes in said insulating material by a lithographic technique at prospective positions to get electrical contacts with said upper electrode and said lower electrode; and
 laying wirings for connecting said upper electrode and said lower electrode through said via holes.

5. The method according to claim 4, wherein said insulating material is a photosensitive solvent-soluble polyimide.

6. The method according to claim 4, further comprising forming a resistor on said substrate before applying said insulating material, and perforating said insulating layer to form a via hole at a prospective position to get electrical contacts with said resistor.